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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/804,022

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Tomoko Taguchi

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11/26/2007

PILLSBURY WINTHROP SHAW PITTMAN, LLP

P.O. BOX 10500

MCLEAN, VA 22102

EXAMINER

BLOUIN, MARK S

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

11/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/804,022

Applicant(s)

TAGUCHI, TOMOKO

Examiner

Mark Blouin

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-5 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-5 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: Examiner's Drawing.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :3/19/04,12/28/04,8/23/05,11/04/05,3/28/06.

## **Detailed Action**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 22, 2007 has been entered.

### ***Drawings***

2. All relevant objections have been withdrawn.

### ***Response to Amendment***

3. The reply filed on November 8, 2007 was applied to the following effect: Claims 3,4,8, and 9 have been amended.

### ***Claim Rejections - 35 USC § 112***

4. All relevant rejections have been withdrawn.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 3-5 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato et al (US 6,697,221).

Regarding Claims 3 and 8, Sato et al shows (Figs. 1-3) a perpendicular magnetic recording head, comprising: a double layered perpendicular recording medium (Md) comprising a soft magnetic underlayer (Mb) and a perpendicular recording layer, which are formed on a substrate (Ma); and a perpendicular magnetic recording head comprising a main pole (24) configured to generate a recording magnetic field in a perpendicular direction, and an auxiliary pole (21) connected to the main pole on a leading side to the main pole (see Examiner's Drawing- connected through portion 25 – highlighted area), and a write shield (13+35+34) comprising a central portion and edge portions along a track width direction and having such a shape that has a thickness that is larger in each of the edge portions than that in the central portion (see Examiner's Drawing) arranged apart from the main pole on a trailing side to the main pole and having a multilayered structure in which a nonmagnetic layer (34) is sandwiched between magnetic layers (35 and 24 – see Figure 2).

7. Regarding Claims 4 and 9, Sato et al shows (Figs. 1-3) the magnetic disc apparatus, wherein the write shield (13+35+34) has a shape such that a number of stacks of the magnetic layer (35) and the nonmagnetic layer (34) are larger in each of the edge portions than those in a central portion (thinner portion located above pole tip (24)) along the track width direction (see Examiner's Drawing).

8. Regarding Claims 5 and 10, Sato et al shows (Figs. 1-3) the magnetic disc apparatus, wherein the auxiliary pole (21,21a)) has a multilayered structure in which a nonmagnetic layer (26) is sandwiched between magnetic layers (Col 8, lines 21-25).

***Response to Arguments***

9. Applicant's arguments filed November 8, 2007 have been fully considered but they are not persuasive.

Applicant asserts on pages 6 and 7:

Sato '221 further discloses a connecting layer 25 composed of NiFe or the like is formed on the surface 21a of the auxiliary magnetic pole layer 21 toward the back from the surface H<sub>va</sub> (in the height direction; in the X direction). (See, Sato '221: col. 8, lines 17-20; FIGs. 1, 2). Furthermore, yoke layer 35 composed of NiFe or the like is formed on the insulating layer 33 with an inorganic insulating layer 34 composed of Al<sub>2</sub>O<sub>3</sub> therebetween. A back section 24e of the main magnetic pole layer 24 and a front section 35b of the yoke layer 35 are *magnetically coupled* to each other, and a base 35e of the yoke layer 35 is *magnetically coupled* to the upper surface 25a of the connecting layer 25. (See, Sato '221: col. 8, lines 56-60; FIGs. 1, 2).

With this said, Applicant submits that there is nothing in Sato '221 that teaches or suggests a *write shield comprising a central portion and edge portions along a track width direction and having such a shape that has a thickness that is larger in each of the edge portions than that in the central portion*, as required by claim 3. Rather, if anything, the Sato '221 appears to teach that the central portion has a thickness that is larger than each of the edge portions (see, Sato '221: FIG 2). As such, Sato '221 teaches away from the recitations of claim 3.

Moreover, it is clear from FIG. 1 that in the configuration Sato '221, the connecting layer 25 is *magnetically coupled* to the auxiliary magnetic pole layer 21. In other words, the yoke layer 35 of Sato et al. corresponds to a portion of the main pole of the present invention, and is clearly different from the claimed write shield of the present invention, which is *not magnetically coupled* to the main pole.

The Examiner maintains that Sato shows a *write shield comprising a central portion and edge portions along a track width direction and having such a shape that has a thickness that is larger in each of the edge portions than that in the central portion*, being the multilayered structure (13+35+34) including the yoke (35). It is well known in the art that a yoke structure can also function as a shield. The thicker edge portions are circled in the Examiner's Drawing. Additionally, the Applicant argues the issue of

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magnetic coupling, however, it is not specifically written in the claims. Therefore, the rejection of Claims 3-5 and 8-10 are upheld.

***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Blouin whose telephone number is 571-272-7583. The examiner can normally be reached on M-F from 6:00 to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Bill Korzuch, can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

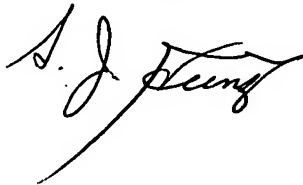
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Blouin  
Patent Examiner  
Art Unit 2627  
November 15, 2007

A. J. HEINZ  
PRIMARY EXAMINER  
GROUP ~~2500~~ 2627

A handwritten signature in cursive script, appearing to read "A. J. Heinz", written over the printed name and title.